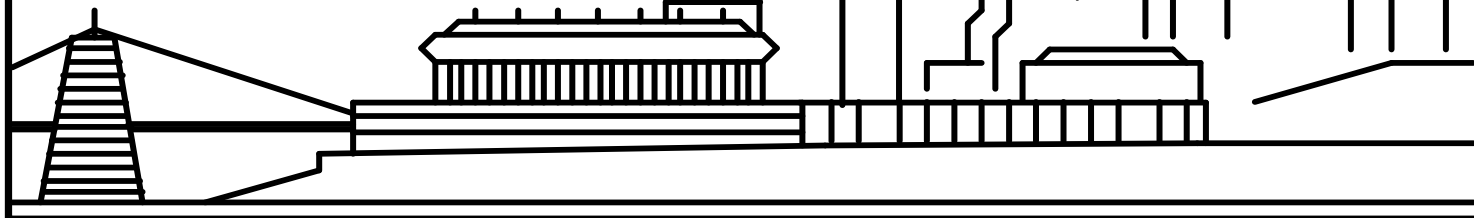




INSTITUTE OF
ELECTRICAL &
ELECTRONICS
ENGINEERS, INC.



JANUARY 1994

IEEE CINCINNATI SECTION NEWSLETTER

JANUARY MEETING

THE ROLE OF ELECTRONICS IN THE CONTROL OF AUTOMOTIVE POLLUTION

DATE: THURSDAY, JANUARY 27, 1994

PLACE: FORD MOTOR COMPANY
4900 PARKWAY DRIVE
SUITE 135, OFF MASON-MONTGOMERY RD. LEAVE I-71 @ EXIT 19,
GO WEST ON MASON-MONTGOMERY RD.

TIME: 6:45 PM PROGRAM

NOTE: **THIS IS NOT A DINNER MEETING!!**

In order to determine the number of people attending, please call DEE SCOTT at
459-8038 by NOON, Wed. January 26th.

Please provide NAME, MEMBER # and COMPANY NAME when making reservations
You may bring a guest.

ABOUT THE PRESENTATION

This presentation by Mr. Robert Carlson of the Ford Motor Company concerns the evolution of electronic engine controls from 1981 through 1994 including: the types of sensors, actuators and microcomputers used previously through the newest on selected vehicles in 1994; types of signals used (analog, digital and frequencies); and diagnostic tools used to repair problems from hand held type to a free standing computer using a CD ROM disk. Demonstrations on live vehicles will allow participants to see what is occurring.

BACKGROUND OF THE SPEAKER

Robert Carlson has been employed by the Ford Motor Company for 15 years: 7 years as a Heavy Truck Service Engineer and the last 8 years as a District Service Engineer. Mr. Carlson trains technicians from Ford dealerships "bumper-to-bumper" on cars and light trucks. Seventy percent of his time is spent on training and the remaining 30 percent is devoted to assisting dealers in repairing problem vehicles as well as performing legal inspections and testifying in court. Mr. Carlson graduated from North Carolina State University in

Vocational Education in 1969 and received his Masters Degree in Secondary Administration from The College of William and Mary in 1976. He also served 10 years in the Army as an officer in the Transportation Corps prior to working at Ford.

CHAIRMAN'S MESSAGE

by Jim Everly

The November/December meeting by Lee Bogart and Greg Leonard of Cincinnati Electronics provided Section Members with an overview of infrared imaging and its applications to industry. The technology of current imagers was explained and demonstrated. The array of hardware presented was fascinating and stimulated alot of "hands on" attention after the meeting. A sincere thanks to Messrs. Bogart and Leonard for an interesting and visually stimulating Section Meeting.

Also, if you are wondering, the following are the results of the election for 1994 Section Officers:

Chairman	Jim Everly
Vice Chairman	Steve Olenick
Secretary	Mark Reineck
Treasurer	Orest Melnyk
Member-at-Large	Ron Harbaugh (Elected 1992)
Member-at-Large	Bill Lohner (Elected 1993)

I would like to thank all of you who took the time to vote. My mailbox was overflowing for a few weeks. Rest assured that my wife and family are glad that the election is over. The telephone numbers of each officer are listed on the outside of the newsletter, so don't hesitate to call with comments or suggestions.

The Executive Committee will meet during the first part of January to plan programs for the remainder of 1994. An updated meeting schedule will be available next month. If you have any suggestions for programs or tours, give me a call.

Don't forget the 59th Annual ESC Banquet on Thursday, February 17, 1994 at the Harley Hotel in Kenwood. The Banquet takes the place of our February Section Meeting. If you plan to attend, please take the opportunity to introduce yourself and, as always, feel free to comment on ways of improving the Cincinnati Section.

AN RADIO, THE EARLY DAYS

By R. J. Reiman, Historian

Where and when were the first radio broadcasts? Credit for this goes to the Westinghouse station KDKA in Pittsburgh for its broadcast of the Harding-Cox presidential election returns on November 2, 1920.

The idea for the broadcast was developed by Frank Conrad, a Westinghouse engineer, who had been transmitting opera music and announcing its source over his amateur station. To his surprise, Conrad received a deluge of letters from his fellow amateurs, acknowledging that they had heard his transmission. Conrad contacted Henry P. Davis, a Westinghouse Vice-President, about the experience. Davis concluded that regularly scheduled broadcasts would stimulate the sales of Westinghouse amateur receivers. He obtained a license from the Department of Commerce to operate an experimental station on 833 kHz, a frequency below the band allocated for amateur use, and he gave Conrad corporate financial support to build and operate a station at the Westinghouse plant. Conrad employed electron tube technology to generate the transmitted signal and thus

achieved broadcast quality. The broadcast of the election returns was heavily promoted in the newspapers and thousands of amateurs were able to receive it.

KDKA's claim to be first to broadcast was challenged, as there were other broadcasts intended for a group of listeners. Fessenden had broadcast from his Brant Rock Station in 1906, to ships at sea, and DeForest had broadcast from the Eiffel Tower in 1908. The 1920 election was also broadcast from station 8MK installed at Detroit News, and David Sarnoff preceded Davis in conceiving the potential of radio to reach a mass audience for commercial purposes. Fessenden and DeForest used spark transmitters for broadcasting with corresponding inferior quality. The KDKA broadcast was the direct ancestor of modern broadcasting.

David Sarnoff's concept of reaching a mass radio audience was documented in a memo in 1915 to RCA President Edward J. Nally. His plan was to transmit music by wireless waves with receivers tuned to the transmitting wavelength. The receiver would consist of a "Radio Music Box" arranged for several wavelengths, these changeable by a single switch, with both amplifying tubes and a speaker mounted in a single box. The box would compete for audience use with the piano and the phonograph. After the success of the first KDKA broadcast, Sarnoff appealed to Owen D. Young, RCA's Chairman, to do a similar broadcast, with a borrowed GE transmitter, of the Dempsey-Carpentier World Heavyweight fight. The fight was held on an extremely hot day and both the fight (Dempsey knocked out Carpentier) and the transmitter only lasted four rounds. The broadcast was a huge success with an estimated audience of 300,000 people, mostly amateur radio hams. Radio broadcasting was born, with RCA as one of the leaders.

WELCOME TO NEW IEEE MEMBERS AND

CURRENT IEEE MEMBERS WHO HAVE MOVED INTO THE SECTION:

The following individuals are new IEEE members in the Cincinnati Section:

Andrew W. Eloff	Peter E. Murray
Dale Freck	John E. Priestner
Joseph W. Kanoza	Douglas P. Seidl
Dawn R. Khulenberg	Calvin K. Stone
Seungug Koh	Jeff M. Swisher
Glenn T. Kozel	Richard P. Weigand
Sandra M. Lanich	John Weiler
Joseph A. Massarelli	

The following are existing IEEE members, who have moved into the Cincinnati Section:

Lawrence J. Brazis	Barney W. Jones
Robert F. Campton	David E. Moellenhoff
Thomas F. Dermis	Michael S. Pfeifer
Bethann Ferrero	B. Sivamohan
Dave Hartup	Matthew D. Werner

A sincere welcome to you all!!!

IEEE NEWS

IEEE NEWS - Dec. 22, 1993

**IEEE-USA Report "What the United States Must
Do To Realize The Economic Promise Of Space"**

"Today, the only way to realize the vaunted scientific and cultural missions of the U.S. Space Program is to hitch them to the powerful rocket of commercial development." This is the position of the United States Activities unit of The Institute of Electrical and Electronics Engineers, Inc. (IEEE- USA), included in a report released last week and calling for a federal commitment to achieve the economic promise of space.

According to Charles K. Alexander, Jr., the chairman of the IEEE-USA Board, "Just as we made space the arena of military competition during the Cold War, keen international economic competition compels us to make space the high frontier of commerce & industry." Citing the successful \$15 billion-per-year satellite communications industry, Dr. Alexander stressed that space commercialization can become profitable if the basic cost of space infrastructure is brought low enough. The IEEE-USA position listed several recommendations for an effective federal program to enable private commercialization of space:

- The highest national space priority must be given to achieving improvements in basic space infrastructure by increasing safety and reliability as well as decreasing the unit cost.
- The US should develop a much safer, more reliable & less expensive alternative to the shuttle - a new passenger and cargo carrying vehicle.
- Large, economically-attractive, space-related markets must be created.

Dr. Alexander emphasized that such a program would not exclude other important civil space activities. "By generating the required revenues for the large expenditures needed for solar system human activities, space industry would ensure the strong public support for all other areas of the US space program," he said.

For a copy of the report, contact Sharon Richardson at 202-785-0017 (voice) or 202-785-0835 (fax).

Dee Scott (call for meeting reservations)	459-8038
Jim Everly - Chairman	777-7129 (Home)
	556-4224 (Fax)
	556-4241 (Office)
Steve Olenick - Vice Chairman	573-6555
Orest Melnyk - Treasurer	397-9212
Mark Reineck - Secretary	753-6290
Bob Morrison - Editor	287-3697 (Office); 287-3698 (Fax)

JANUARY 1994

IEEE CINCINNATI SECTION NEWSLETTER



**The Institute of Electrical and
Electronics Engineers, Inc.
C/O Dee Scott
7780 Hackney Circle
Maineville, Ohio 45039**

DATED MATERIAL
Please deliver promptly